Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-7 Cancelled

8. (new) A method for predicting a precipitation behavior of oxygen in a silicon single crystal for predicting behavior of oxygen precipitates produced in the silicon single crystal in response to heat treatment, comprising:

dividing a heat treatment process into a plurality of time segments;

determining a nucleation rate $I\ (T,C,TD)$ of the oxygen precipitates in each time segment from a nucleation rate formula,

$$I(T,C,TD)=a(T)C^9\ TD^{1/3}$$

wherein $I\ (T,C,TD)$ is the nucleation rate $(cm^{-3}\ s^{-1})$, C is an oxygen concentration $(x10^{17}\ cm^{-3})$, TD is a thermal donor concentration $(x10^{15}\ cm^{-3})$, T is a temperature; $a(T)$ is a constant determined by the temperature; and

determining a density of nuclei $N(t')$ of the oxygen precipitates produced during a period Δt that begins at the time t', from a formula,

$$N(t')=I\ (T,C,TD)\Delta t.$$

9. (new) The method according to claim 8, further comprising:

determining a growth rate *R(t',t)* in time *t* of nuclei of the oxygen precipitates produced during the period *Δt* that begins at time *t'*, form a formula,

$$\frac{\partial R(t',t)}{\partial t} = \frac{DV}{2R(t',t)}(C - Ci)$$

In which $Ci = C^{eq} \, exp\left(\frac{V\sigma}{RkT}\right)$

wherein *R(t', t)* is a radius in the time *t* of the nuclei of the oxygen precipitates produced during the period *Δt* that begins at time *t'*, and *Ci* is an equilibrium oxygen concentration at an interface of spherical particles with a radius *R*, and

determining an amount of precipitated oxygen from a formula,

$$\frac{\partial C}{\partial t} = -4\pi D \int_{t'=0}^{t'=t} N(t')R(t',t)(C - Ci)dt' .$$

10. (new) The method according to claim 8, further comprising:

determining the thermal donor concentration TD at the temperature T_2 from 400°C to 550°C which the silicon single crystal undergoes during crystal growth, from a formula,

$$TD=TD(T_2)^{eq}\{1-\exp(-aDC(t_{12}+t))\}$$

wherein TD is the thermal donor concentration $(x10^{15}\ cm^{-3})$, TD^{cq} is a thermal equilibrium concentration of the thermal donor concentration, a is a coefficient $(=9.0x10^{-50})$, k is a Boltzmann's constant, D is a diffusion constant of oxygen, C is the oxygen concentration, t is the time, and t_{12} is an equivalent time required for generation at the constant temperature T_2 of an amount of thermal donors generated during cooling to the temperature T_2.

11. (new) A storage medium for storing a program for predicting by a computer a behavior of oxygen precipitates produced in a silicon single crystal in response to heat treatment, wherein the storage medium stores the following processing as the program:

processing in which

a heat treatment process is divided into a plurality of time segments, and

a nucleation rate $I(T,C,TD)$ of the oxygen precipitates in each time segment is determined from a nucleation rate formula:

$I(T,C,TD)=a(T)C^9TD^{1/3}$

wherein $I(T, C, TD)$ is the nucleation rate $(cm^{-3}s^{-1})$, C is an oxygen concentration $(x10^{17}cm^{-3})$, TD is a thermal donor concentration $(x10^{15}\ cm^{-3})$, T is a temperature: $a(T)$ is a constant determined by the temperature; and

processing in which a density of nuclei $N(t')$ of the oxygen precipitates produced during a period Δt that begins at time t', is determined from a formula, $N(t')=I(T,C,TD)\ \Delta t$.

12. (new) The storage medium for storing a program according to claim 11, wherein the storage medium further stores the following processing as the program:

processing in which a growth rate *R(t',t)* in time *t* of the nuclei of the oxygen precipitates produced during the period Δt that begins at time *t'*, is determined from a formula,

$$\frac{\partial R(t',t)}{\partial t} = \frac{DV}{2R(t',t)}(C - Ci)$$

In which $Ci = C^{eq}\, exp\left(\frac{V\sigma}{RkT}\right)$

wherein *R(t',t)* is a radius in the time *t* of the nuclei of the oxygen precipitates produced during the period Δt that begins at time *t'*, and *Ci* is an equilibrium oxygen concentration at an interface of spherical particles with a radius *R*; and

processing in which an amount of precipitated oxygen is determined from a formula,

$$\frac{\partial C}{\partial t} = -4\pi D \int_{t'=0}^{t'=t} N(t')R(t',t)(C - Ci)dt' .$$

13. (new) The storage medium for storing a program according to claim 11, wherein the storage medium further stores the following processing as the program:

processing in which the thermal donor concentration *TD* at the temperature T_2 from 400°C to 550°C which the silicon single crystal undergoes during crystal growth, is determined from a formula,

$$TD=TD(T_2)^{eq}\{1-exp(-aDC(t_{12}+t))\}$$

wherein *TD* is the thermal donor concentration $(x10^{15}\ cm^{-3})$, TD^{eq} is a thermal equilibrium concentration of the thermal donor concentration, a is a coefficient $(=9.0x10^{-50})$, *k* is a Boltzmann's constant, *D* is a diffusion constant of oxygen, *C* is the oxygen concentration, *t* is the time, and t_{12} is an equivalent time required for generation at the constant temperature T_2 of an amount of thermal donors generated during cooling to the temperature T_2 occurs.